



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/595,853

05/16/2006

Rudiger Nowak

032301.457

7869

25461 7590 12/14/2009
SMITH, GAMBRELL & RUSSELL
SUITE 3100, PROMENADE II
1230 PEACHTREE STREET, N.E.
ATLANTA, GA 30309-3592

EXAMINER

LACLAIR, DARCY D

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

12/14/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,853	Applicant(s) NOWAK ET AL.	
	Examiner Darcy D. LaClair	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/5/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections, except for those maintained below are withdrawn in light of the amendment filed on **8/25/2009**.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Since no new grounds of rejection are set forth, the following action is properly made **FINAL**.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 4/29/2009 has been considered by the examiner. It is noted that the foreign document WO 2003/029338 is not present in the electronic file wrapper and therefore was not considered.

Additionally, it is noted that while US 5,136,500 was considered, it is directed to a shared memory information processing system, which does not, *prima facie*, seem to be related to the instant invention. Applicant is notified of this so should this be a typographical error, the correct document number can be submitted in a timely manner.

Claim Rejections - 35 USC § 102

3. **Claims 1-2** are rejected under 35 U.S.C. 102(b) as being anticipated by **Nowak et al. (US 2001/0047047)**

The rejection is adequately set forth in **paragraph 3** of the office action mailed **4/29/2009**, and is incorporated here by reference.

Claim Rejections - 35 USC § 103

4. **Claims 3 and 5** are rejected under 35 U.S.C. 103(a) as being obvious over **Nowak et al. (US 2001/0047047)**

The rejection is adequately set forth in **paragraph 4** of the office action mailed **4/29/2009**, and is incorporated here by reference.

5. **Claims 1-3 and 5** are rejected under 35 U.S.C. 103(a) as being obvious over **Meyer et al. (US 2002/0077388)**

The rejection is adequately set forth in **paragraph 5** of the office action mailed **4/29/2009**, and is incorporated here by reference.

6. **Claims 1-3 and 5** are rejected under 35 U.S.C. 103(a) as being obvious over **Meyer et al. (US 2002/0077388)** in view of **Klingel et al. (US 4,877,595)**

The rejection is adequately set forth in **paragraph 6** of the office action mailed **4/29/2009**, and is incorporated here by reference.

7. **Claims 1-3 and 5** are rejected under 35 U.S.C. 103(a) as being obvious over **Gruenewaelder et al. (WO 2001/090271)** in view of **Hasenzahl et al. (US 2002/0197311)**

The rejection is adequately set forth in **paragraph 3** of the office action mailed **4/29/2009**, and is incorporated here by reference.

Response to Arguments

8. Applicant's arguments filed **8/25/2009** have been fully considered. Specifically, applicant argues

(A) Claim 1 has been amended in accordance with the examiner's suggestion to overcome the objection;

The Nowak Declaration submitted 8/25/2009 discusses the published application US2001/0047047, showing tests of the silica products known as Aerosil R202, Aerosil R805, and Aerosil R812, which exhibit a tamped density of 50 g/L. The density values reported in the table in paragraph [0018] are obtained by the method known as "Carter-Filler", which is a standard densification method in the silica industry; this is a different method from the compacting of silica by a roller compactor or pressing filler belt, described in US 4,877,595. In the present application, the symbol VV means silica has been densified with the pressing filter belt, and V means the silica has been densified with the roller compactor. In the published application '047, Aerosil R202 and Aerosil 150 have a lower density than the products of the instant invention; Aerosil R8200 has a tamped density of 140 g/l, and is densified using a process carried out with a ball mill, and therefore has significantly different properties, and can not be used as a thickener or a thixotropic agent. No rheological properties are shown, and incorporation time is not mentioned. Compacted silicas having a tamped density of 90 g/l have a significantly shorter incorporation time than standard silicas having a tamped density of 50 g/l. The reduction in incorporation time achieved by these silicas represents money

Art Unit: 1796

saved on the commercial scale. Incorporation of Aerosil R202 VV 90 takes 18 minutes, whereas with Aerosil R202, 25 minutes are required, and the Aerosil R202 VV 90 has a viscosity of 73 Pa-s; Table 2 of the instant specification compares Aerosil R202 and Aerosil R202 VV 90; the reduced incorporation time and maintained thickening and thixotropic effect are an important technical advantage and was not foreseen in 2003.

(B) The rejection of Claims 1 and 2 as anticipated by Nowak et al (US 2001/0047047) is traversed because it does not describe the claimed invention. Specifically, the present claims are directed to adhesive and sealant compositions including compacted hydrophobic pyrogenic silica prepared by a roller compactor or pressing filter belt; The particular compaction method renders the compositions thixotropic, and the compositions are characterized by a reduced time required for incorporating the silica into the composition, compared to conventional silicas; Nowak et al uses pyrogenically produced metal oxide or metalloid, such as the Aerosil silicas, however these silicas are not compacted using a roller compactor or a pressing filter belt; A Declaration by Dr. Nowak is filed establishing that the silicas described in US 2001/0047047 were prepared by the method known as the "Carter-Filler" method, and are not the same as the silicas of the present invention; Although the compacted Aerosil silicas are identified by the letter "v" and the letters "vv" this is not the same as the Aerosil R202vv60 and Aerosil202vv90, which have a density of 60 g/l and 90 g/l, respectively. The reduced mixing time has commercial importance, and the technical advantage of lowering the mixing time was not foreseen in 2003 when the priority

Art Unit: 1796

application was filed. The rejection of Claims 3 and 5 under 103(a) over Nowak et al. is traversed for the same reasons.

(C) The rejection of Claims 1-3 and 5 over Meyer et al (US 2002/0077388) is traversed because Meyer describes silica which has been structurally modified by a ball mill, and does not have any thickening effect (evidenced by the statement that the silica has “only slight influence on the rheology, par [0015]) The silica is not compacted according to the method defined in the present claims. Applicant’s silica is incorporated into the resin much faster than silica not compacted as defined in Claim 1, and there is no description of suggestion of the roller compactor or pressing filter belt in Meyer; it is noted that inherency arguments must be based on fact, and not on speculation.

(D) The rejection of Claims 1-3 and 5 over Meyer et al. (‘388) in combination with Klinge et al. (US 4,877,595) is traversed because of the deficiencies in Meyer, above, as well as the following deficiencies of Klinge. Specifically, while Klinge describes pyrogenically prepared silica compressed by a rotary filter with a pressing band, there is nothing that suggests that polymeric compositions would be mixed more rapidly by using this silica, hence there is no motivation to change the silica of Meyer; The rejection does not state a rationale for the obviousness rejection;

(E) The rejection of Claims 1-3 and 5 over Gruenwaelder (WO 2001/090271) in combination with Hasenzahl (US 2002/0197311) is traversed because Gruenwaelder discloses adhesives containing a silica thickener but does not disclose how the silica has been compacted, and contains no suggestion that compaction could be advantageous; Hazenzahl discloses pyrogenic silica by means of a rotary vacuum filter,

Art Unit: 1796

but does not teach how to reduce the mixing time, nor does the record show that the silica of Hasenzahl is the same as that of applicants.

9. **With respect to argument (A)**, applicant's arguments have been considered and the objection to Claim 1 has been withdrawn *in light of applicant's amendment*. using the Markush language "selected from the group consisting of A, B, and C."

With respect to the Nowak Declaration submitted 8/25/3009, there are several issues which are noted. First, although the Declaration discusses the difference in the incorporation time and effect of Aerosil R202 versus Aerosil R202 VV90, this represents a silica which falls within the required compacted bulk density of 60 g/L to 200 g/L (R202 VV90) and a silica which does not fall within the compacted bulk density required (R202). Although the uncompacted, tamped density of Aerosil R202, Aerosil R805, and Aerosil R812 are discussed (50 g/L), and has addressed how the compaction of the silicas in the '047 document are obtained, applicant has not directly addressed the effect of the silicas compacted by another method in the Declaration. Applicant says only that no rheological properties or incorporation times are shown for the Aerosil R 8200 product which has a density falling within the required range, however this does not provide any type of data which would demonstrate the similarity or difference of results with silica compacted by another method. After making the statement that no data is provided in the '047 document, applicant goes on to make comparisons of 90 g/l and 50 g/l products. It is noted that Aerosil R 8200 is not a 50 g/l product, and therefore the discussion of Aerosil R202, uncompacted, is not relevant to

Art Unit: 1796

the issue of whether or not Aerosil R8200 exhibits the properties of compacted Aerosil R202 VV90. With regard to applicant's reported data comparing Aerosil R202 VV90 (18 minutes) and Aerosil R202 (25 minutes), p. 5, it is not clear what this data represents. There is no weight percent amount given, so it is not even clear if this example is commensurate with the scope of the claims. Furthermore, applicant has not discussed whether this is a single experiment for each condition, or whether multiple experiments were performed to obtain statistically relevant results. The difference between 18 and 25 minutes may or may not be statistically relevant depending on the standard deviation of each number. Additionally, although applicant provides the viscosity of the Aerosil R 202 VV90 thixed adhesive, data is not provided for the non-compacted example.

With respect to argument (B), applicant's arguments have been considered but are **not persuasive**. First, it is noted that applicant's pyrogenic silica is stated in product by process format.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Although applicant has provided several examples in the specification and a single data point in the Nowak Declaration, these are not sufficient to demonstrate that the process provides a patentably distinct silica. Specifically, both the example in the Nowak Declaration and the examples in the specification compare samples which have been compacted to a density of either 60 g/l or 90 g/l with samples which have not been

Art Unit: 1796

compacted. This shows that compacted silica has a different behavior than uncompacted silica, but does not show the criticality of the roller compacter or pressing filter belt in preparing the compacted silica. Although '047 does not report rheological or viscosity properties, based on the compacted density of silica fillers taught in the reference, specifically Aerosil 150 which is compacted from 50 to 75 g/l (see par [0017]) and Aerosil R8200, which has a tamped density of 140 g/l (see par [0139]), which falls within applicant's described and claimed (Claims 2 and 3) compacted density range, it is expected that similar results would be obtained. Applicant has not, at this time, provided any data which refutes this expectation.

With respect to argument (C), applicant's arguments have been considered but are **not persuasive**. First, it is noted that applicant's pyrogenic silica is stated in product by process format, therefore compacted silica prepared by ball milling is a structurally modified silica having a compacted density of 50 to 400 g/L, which overlaps with the applicant's described range. Applicant has not demonstrated evidence that silica compacted by a ball mill behaves differently. With regard to the viscosity of the system, or thickening effect, applicant does not claim a thickened composition, but rather a thixotropic composition. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., thickening) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Additionally, the discussion of the thickening of the

Art Unit: 1796

system to which applicant refers (par [0015]) is directed to the mixing and incorporation of silica, and not to the thickening effect of the composition under no shear stress. In fact, in the Nowak Declaration, the benefit of the compacted silica thickening and thixotropic effect remains while mixing time is lowered, (p. 5) which appears to describe a compound which has little effect on the mixing viscosity of the system, while giving a good thickening effect to the final composition. This does not appear to be at odds with the disclosure of Meyer, discussing no negative effect on viscosity or rheology during incorporation, allowing high levels of incorporation. In fact, the viscosity of the binder + silica is significantly reduced (10-50 fold reduction) in both cases when the silica has been pretreated to give it a compacted, hydrophobic nature. (See p. 3 Table 2) This results from a reduction of viscosity when shear is applied. (See par [0030], Table 2, 6 rpm vs. 60 rpm) This is discussed in terms of larger incorporation amounts, but would also reduce the amount of stirring necessary, at a given loading level, to cause the silica to become well dispersed in the composition. The descriptions provided by Meyer as to the mechanics of the system provide facts upon which the behavior of the system can be deduced.

With respect to argument (D), applicant's arguments have been considered but are **not persuasive**. With respect to Meyer, applicant is directed to the discussion of (C), above. With regard to the combination of Meyer and Klinge, Meyer teaches silica compacted by mechanical effects. (See par [0007]) Meyer exemplifies a ball mill, but does not limit the compacting to this method. (See par [0008]) Klinge teaches that the silica prepared by the pressing filter method exhibits the same transparency (see col 3

Art Unit: 1796

line 35 and 55) but allows greater compression than known methods (see col 3 line 40-42) yielding densities of 140-190 and 90-120 g/l (See col 4, Examples) As previously discussed (see **paragraph 6** of the office action mailed **4/29/2009**) the benefits of Klinge's method, providing equivalent transparency and greater compression are motivations to combine these references, and to use the method of Klinge to provide the compaction required by Meyer. Meyer discusses the benefits of compacted silica, therefore it would be obvious to select a method which can achieve this compaction. In response to applicant's argument that Klinge does not teach a reduction in mixing time for silica compacted by a rotary filler, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

With respect to argument (E), applicant's arguments have been considered but are **not persuasive**. Gruenewaelder teaches that the thickener is intended to ensure plastic flow behavior, or in other words flows with shear stress. This silica should be pyrogenic, hydrophobic silica. (See par [0018]) Gruenewaelder also specifically desires thixotrophy (see par [0018]) in order that the composition would have its stability improved when applied (no shear) but will have a reduced viscosity upon mixing or applying (shear). A reduced viscosity upon mixing is will allow a reduction in time for incorporation of the silica. Hasenzahl teaches such a pyrogenic silicon dioxide with a tamped density of 80 to 250 g/l, (see abstract) preferably 100 to 200 g/l, (par [0018]) prepared by rendering the surface hydrophobic (see par [0025]) and compaction by a

Art Unit: 1796

rotary vacuum filter equipped with a compacted strip. (See par [0026]) Hasenzahl teaches good effects, including stabilizing the composition, consistent with Gruenewaelder's reasons for incorporating the silica into the composition. Although applicant traverses the rejection because there is no clear record that the silica is the same as that of applicant, it is noted that the silica has a tamped density of 80 to 260 g/l, which is consistent with the density taught and required by applicant.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darcy D. LaClair whose telephone number is (571)270-5462. The examiner can normally be reached on Monday-Friday 8:30-6.

Art Unit: 1796

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Darcy D. LaClair
Examiner
Art Unit 1796

/DDL/

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796